

National Endowment for the Arts: Computer Interface with Video Synthesizer. Proposal  
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National Endowment for the Arts  
Applicant: Experimental Television Center

Project Grant Application A00815-76  
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Summary of Project Description:

Future developments in video art depend in part on the systems of image production, manipulation and control designed and made available to the artist. Computer Interface with Video Synthesizers concentrates on the design and construction of an interface between computer and image synthesizer and the development of a computer language to permit the artist to enter the system to create images and notate compositions. There is a growing interest relating computer and image processing systems. The successful relationship will provide artist with important gains in precision in the creation of imagery through computer pre-programming of transitions, with simultaneous control over many image sources and processing. The systems provide the option of manual or computer control over preselected synthesizer capabilities; computer controlled processes can match the speed of production of video images, producing control signals and thus images at a rate not possible manually. Computer controlled systems also offer greater reliability of image duplication and stability of control at fairly low cost. The artist requires a language to direct the computer in the production of images; with language the video maker can preprogram the video work, observe, edit, reprogram and reedit with potential for duplication and precision of image production and transition. Through the use of language the artist can store his program on audio cassette and can access other programs. The interface between computer and video image processing system and the language development are not limited in application to specific equipment and the information, available to interested individuals and groups, can be adapted to construct simple or complex systems. The system developed will be available to artists to use at the Center. \Participants listed in attachment, "Project location".)

Attachment: Project Location

Computer Interface with Video Synthesizers will be conducted at the Center under the direction of Ralph Hocking; project participants will include Walter Wright, computer consultant, Don McArthur, design consultant, Nam June Paik, artist, Woody and Steina Vasulka and David Jones. (Resumes for Hocking, Wright and McArthur attached). There is an increasing concern on the part of artists about the development of video tools responsive to the needs of the maker and which allow for direct and precise control over a greater number of image producing variables. The Center with support from the New York State Council on the Arts in 1974-75 has been supporting basic research and the development of low cost modules for image manipulation and processing which are also part of a system which is flexible and offers to the artist maximum control over a large variety of processes. Current systems components include gray level hard and soft edge keyers, the Spatial and Intensity Digitizer by McArthur and the Voltage Controlled Colorizer by Jones, McArthur and Wright. The SAID reproduced a black and white camera image which is reconstructed from memory by horizontal and vertical linear structures varying in gray level which are controllable. The colorizer has four black and white inputs each with

controls for video level, pedestal, key clip, chroma level and red, green and blue color mix; the colorizer controls can be operated manually or by voltage generated by oscillators or by a computer. Our next project, for which we are seeking support from the National Endowment, is the design and implementation of the interface between the Intel computer and the video system components described above. The Center hosted an informal meeting in March 1975 to discuss the need for further research of this nature; it was felt that there is a decided need by artists working in video for more sophisticated video systems which expand the abilities for image making and allow the artist direct control over variables of image production. It was also felt that there was a need for a program to encourage and support basic research in the development of video tools to expand the image-making vocabulary of the artist. The Center believes that a working relationship between engineer and artist can best accomplish this.

The Center was established in 1971 with support from the New York State Council on the Arts. Since that time the Center has served as equipment resource center and studio facility for thousands of videomakers. Our programs (see support materials) are generally conducted for residents of New York State since the Council is our primary funding source. Within the State participants in the studio facility have come from all over; in 1974-75 Walter Wright conducted a series of 18 synthesizer workshops/performances at 15 locations in the State including Albany, Buffalo, New York, Syracuse, and Binghamton. The Center has also been utilized by people from states throughout the northeast and from Canada. The region which will be served by the proposed project will probably center on the northeast; this is particularly true of the use of the system at the Center. The printed information concerning computer interface construction and examples of programming would probably be valuable to many other centers of video activity. In conducting the basic research which is the foundation of the present proposal, the Center has been in informal contact with individuals interested in the computer interface with video image processing systems and video centers such as Media Study in Buffalo, Portable Channel in Rochester, Lanesville TV and Woodstock Community Video. New York State has been since 1970 an area of intense concentration on the growth of video as an art. The emphasis placed on video art has produced people who are knowledgeable, sophisticated and critical of existing systems with well-defined needs in terms of systems design. There is at the present time a need for a center which serves as a focal point for technological developments in the fields of systems design, research and construction. The artist is probably best able to indicate his needs in terms of systems functions and a relationship between artist and scientist is essential for the development of systems. The Center is easily accessible to other centers in the state and the northeast, has already begun preliminary research on systems design and computer interface with video synthesizers and permits the artist and the scientist to engage in research toward the goals of design flexibility, responsiveness and precision. We encourage people interested in computer interface with video systems to visit and work at the Center. The Center would make the resulting systems available for artists' printed information would also be disseminated.